



JAN 24 1996

January 23, 1996

Mr. Richard Spiese  
Project Manager  
Petroleum Sites Management  
Vermont Department of  
Environmental Conservation  
103 South Main Street  
Waterbury, Vermont 05676

RE: Deerfield Properties/DJ's Corner Mobil - Initial Site Investigation Report

Dear Mr. Spiese:

Please find enclosed our Initial Site Investigation report on the above site. According to Linda Elliott this site has not yet been assigned to a VDEC site manager. Therefore she suggested that it be sent to you.

The site investigation activities revealed soil contamination on site and ground water contamination on and off-site in concentrations greater than the Enforcement Standards. In the report, we recommend that an additional well be installed to delineate the extent of the contamination, that the wells and White River be resampled and analyzed for a wider range of target compounds and that a soil vapor extraction pilot test be performed. This test will gather data so that a Corrective Action Feasibility Investigation (CAFI) can be performed. This CAFI will evaluate whether active remediation will be cost-effective at this site compared to waiting for intrinsic bioremediation to limit migration of contamination.

Unless we hear otherwise from you, we will continue according to this plan under the Expressway procedures. If you have any questions or concerns with regard to the data presented in this report or the recommendations please feel free to contact me or Steven LaRosa at 453-4384.

Sincerely,

Alan Moore  
Project Engineer

SL/smk  
enclosures  
cc: Bill Sellinger

## **Initial Site Investigation**

Deerfield Properties/DJ's Corner Mobil  
Routes 14 & 110  
So. Royalton, Vermont 05068

SMS Site #95-1933  
Facility ID #124

An UST Facility Owned By:

Bradford Oil Company  
P.O. Box 394  
Bradford, Vermont 05033  
(802) 222-5250  
Contact: Mr. Bill Sellinger

Prepared by:

Lincoln Applied Geology, Inc.  
RD #1 Box 710  
Bristol, Vermont 05443  
(802) 453-4384  
Contact: Mr. Steven LaRosa

January 23, 1996



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Lincoln Applied Geology, Inc.  
Environmental Consultants

RD # 1 Box 710 • Bristol, Vermont 05443 • (802) 453-4384 • FAX (802) 453-5399

## EXECUTIVE SUMMARY

In response to finding significant petroleum contaminated soil and ground water during underground storage tank (UST) removal and abandonment activities, Bradford Oil Company, Inc. (BOC) contracted Lincoln Applied Geology, Inc. (LAG) to perform an Expressway Site Investigation at Deerfield Properties/DJ's Corner Mobil property (DJ's). This site investigation consisted of the installation and sampling of four ground water monitoring wells with concurrent evaluation of soil gas contamination with a photoionization detector (PID).

The results of this Expressway Site Investigation show that a significant amount of vapor, adsorbed, and dissolved phase contamination exists on-site that has and is spreading off-site. The full extent of the ground water contamination is not known. No free phase product was observed. Ground water concentrations on and off-site exceed Ground Water Enforcement Standards. Other receptors that could be impacted by the existing contamination include the underlying bedrock aquifer and the White River. However, we have not identified any detrimental public health or environmental impacts that have resulted from this contamination. Therefore, no immediate corrective action is deemed necessary. We recommend that the extent of contamination be more fully delineated. The impacted soils appear very amenable to remediation via soil vapor extraction (SVE). Therefore, we also recommend that SVE be evaluated as a cost effective method of remediating the source of contamination.



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## GENERAL SITE HISTORY and DESCRIPTION

DJ's Mobil is owned and operated by Deerfield Properties. The USTs that were removed were owned by BOC. DJ's is located in So. Royalton and lies at the northeast corner of the intersection of Routes 110 and 14. The general site location is depicted on **Figure 1**. A detailed site map with approximate property boundaries is included in **Figure 2**. An office lies to the north of the site and an apartment building lies to the northeast. South across Route 14 is a commuter parking lot. South of this commuter parking lot the land drops steeply to the White River.

In mid-October, two 6,000 gallon gasoline USTs, one 4,000 gallon gasoline UST and one 2,000 gallon diesel UST were removed and replaced with one 10,000 gallon gasoline and one 10,000 split gasoline/diesel UST. During the removal of these registered USTs, two out-of-service unregistered USTs were discovered buried partially beneath the building. These USTs were cleaned by BOC and abandoned in place because of their location under the building. Results of the UST removals and assessment indicated that one or more of the USTs had been leaking and that soil contamination is present on-site surrounding at least one of the 6,000 gallon USTs, the 4,000 gallon gasoline UST, and the 2,000 gallon diesel UST. Soil contamination was also identified associated with the unregistered USTs. Additional information collected during the UST removal and new UST installation was summarized in an October 24, 1995 letter and UST Permanent Closure Form, copies of which are included as **Appendix C**.

A brief receptor assessment performed at the time of the UST closure revealed underlying ground water and the adjacent White River as potential receptors of any migrating contamination. Ground water was not observed during the excavation and UST removal activities. DJ's and all other surrounding properties obtain water from the Royalton Fire District No. 1 Public Community Water System. In response to finding significant petroleum contaminated soil during the UST removal and abandonment, a Site Investigation Expressway Notification was submitted by LAG and BOC contracted LAG to perform an Expressway Initial Site Investigation at the DJ's site. The rest of this report details the results of this investigation.

## SITE GEOLOGY

On October 28 and 29, 1995, four soil borings were advanced on the DJ's site by T & K Drilling in order to inspect the soils and any soil contamination, and to install ground water monitoring wells. The locations of the four borings and monitoring wells are shown on **Figure 2** as MW 1, 2, 3, and 4. MW 1, 2, 3, and 4 were advanced to 30', 25', 13', and 12' respectively. Soil boring logs and well construction logs are included in **Appendix A**.

These borings show that the site is underlain by a variable depth (1 - 12 feet) of stony sand fill placed directly atop native silty fine to coarse sand with some weathered schist



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fragments. Based on the report that blasting was necessary for construction of the garage; that schist fragments were observed near the bottom depth of the borings; and that auger refusal was at about 12 feet in MW-3 and MW-4, it is likely that bedrock is not far below the bottom of each boring.

## HYDROGEOLOGY

Monitoring well and ground water elevations were measured on November 29, 1995. These measurements are included in **Table 1**. The water levels were measured with an interface probe capable of measuring free floating product thicknesses as thin as 0.01 feet. No free floating product was measured in any of the 4 monitoring wells. Utilizing this water level data a ground water contour map has been prepared and shown as **Figure 2**. This map confirms the expected ground water flow direction toward the White River. The ground water gradient appears to be relatively steep at 0.2 feet per foot.

## CONTAMINATION MONITORING/ANALYSIS

**Soil Gas:** During the removal and replacement of the old USTs, a photoionization detector (PID) was used to measure the total level of organic vapors associated with the soil around the USTs. The results were discussed in the UST Permanent Closure Form, a copy of which is included as **Appendix C**. Pea stone was placed directly around the new UST. Following this, excavated soils were backfilled into the remainder of the excavation, including where the old USTs had been. As the new USTs were installed, two vapor monitoring points, VP-1 and VP-2, were installed by hand in the pea stone to monitor the degree of volatile organic contamination in the UST area in the future. On November 29, 1995, the concentration of volatiles in the headspace of these points was measured with the PID. The results were 90 and 4.2 parts per million (ppm), (also shown in **Table 2**), levels which clearly indicate the continuing presence of volatile organic contamination in this area.

During the advancement of the soil borings, a PID was used to measure the total level of organic vapors associated with the collected soil samples. These results are listed in the boring logs included as **Appendix A**. The logs show that significant gasoline odor and elevated PID assays were observed in borings 2 & 3 in the pump island and UST area (the source area). In MW-2, the odors and PID readings were highest in the 12-foot thick vadose zone. In the MW-3, the highest odors and PID readings were at 11-13' in moist soils. In upgradient well MW-4, no odors or positive PID levels were evident. In down-gradient well MW-1, slight odors and detectable PID levels were seen only in the deepest soil samples from 23-30 feet below grade. The highest level of PID quantifiable contamination was noted in MW-3 between 11 and 13 feet below grade at 260 ppm.

When the ground water in the monitoring wells was sampled on November 29, 1995, the concentration of organic vapors in the headspace of the monitoring wells was



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assayed with the PID. The results are also included in **Table 2**. These headspace results correlate well with the PID levels measured during the soil borings (i.e., MW-2 and MW-3 had elevated levels, MW-1 and MW-4 had low levels).

**Soil Analysis:** Some of the excavated soils were backfilled into the pit created by the removal of tanks #0001 and #0002. The remaining soils (180 yds<sup>3</sup>) have been stockpiled at the McCullough gravel pit in Royalton, Vermont (**Figure 1**). In the spring the soil contamination level will be measured and, if necessary, manure will be incorporated to stimulate biodegradation. When the soils become sufficiently remediated, they will be thinspread.

As explained in the UST Closure Form (see **Appendix C**) two unregistered tanks (designated #0005 and #0006) were discovered lying partially under the building. Eight inches and one inch of product were identified in tank #0005 and #0006, respectively. Very high PID levels and "fresh" gasoline odors were detected under and around these tanks (i.e., 2000+ ppm around tank #0005 and 200-300 ppm around #0006). Two soil samples, designated "mystery 1" and "mystery 2" were collected and submitted to Green Mountain Laboratories, Inc. for analysis by EPA Method 8260 including methyl tert-butyl ether (MTBE). The results are summarized in **Table 3** and the laboratory reports are included in **Appendix B**. The sample from UST #0005 (mystery 1) had the higher level of contamination with 322 ppm (mg/kg) total BTEX and MTBE. UST #0006 contained 168 ppm (mg/kg) total BTEX and MTBE. Both soil samples also contained significant levels of other substituted benzenes (which are typical of petroleum products) and ortho and para isomers of chlorotoluene (which are not typical of petroleum products). Possible sources of these chlorotoluenes are not known at this time. They are normally used as solvents, dyes, and as a raw material for the synthesis of other organic compounds. Their properties relative to environmental fate and transport (vapor pressure, solubility, soil adsorption, etc.) are similar to the BTEX compounds. One of the isomers (para-chlorotoluene) has a Vermont Health Advisory Water Quality level of 100 ppb (ug/l). It is possible that this soil concentration of chlorotoluenes will generate ground water chlorotoluene concentrations in excess of this water quality level. Therefore we recommend later that future analyses of ground water from the site be analyzed by EPA Method 8260 to determine if these chlorotoluenes are present in the ground water.

**Ground water contamination:** Monitoring wells were installed in the four soil boring advances. The four monitoring wells were installed with 7 to 10 feet of screen intercepting the ground water table. The center of the screens of monitoring wells 1 through 4 are 25', 20', 8.5', and 7.5' below ground level, respectively. The locations of these wells (MW's 2 - 4 on the site and MW-1 across Route 14) are shown on **Figure 2**.

On November 29, 1995 each of the monitoring wells was purged and sampled according to standard procedures. The samples were submitted to Green Mountain Labs for analysis of BTEX and MTBE by GC/MS. Copies of the analytical laboratory results are

included in **Appendix B**, and a summary of the data is presented in **Table 4**. The variation in ground water concentrations in the four monitoring wells correlate well with the magnitude of the headspace PID results discussed earlier.

All four monitoring wells were contaminated with BTEX compounds and MTBE but to greatly varying degrees depending on the distance from the contaminant source. The upgradient well, MW-4, was only very slightly contaminated and no compounds were above the ground water quality standards. MW-3, which is located between the pump island, Route 14, and UST area was the most contaminated well with a total BTEX of 38,600 ppb (benzene, ethylbenzene, xylenes, and MTBE exceed the standards). The off-site (south across Route 14) well MW-1 was contaminated to the degree that both benzene and xylenes exceed the 1988 Vermont Ground Water Enforcement Standards (VGWES) and MTBE exceeds the Vermont Water Quality Criteria for Water Consumption. In general, xylenes were found in the greatest concentrations. MW-2, which is located to the east of the UST area, was less contaminated than MW-3 or off-site MW-1 and only benzene and MTBE exceeded standards.

**Surface Water Quality:** A water sample from the White River was also collected on the bank below the site and analyzed. No quantifiable levels of BTEX or MTBE were found. If contaminated ground water was discharging in a line seep to the river, one might expect to detect contamination in river water directly at the bank before full dilution by the river. However, the great capacity of the river to dilute discharging contamination would make any contamination undetectable a short distance downstream.

## CONTAMINANT RISK ASSESSMENT

**Soils:** Monitoring of soil contamination during the UST closure and later (via the VP wells) demonstrated that contaminated soil is present in the UST area. The entire area is paved so there is no exposure of contaminated soil to the general public. Exposure to contaminated soils and vapors can occur to workers if soil is excavated in the future. Since this is still an operating station, workers conducting excavation activities would expect to encounter such soils and would normally be equipped to be protected from exposure.

**Ground water:** Ground water sampling has shown that the underlying ground water is contaminated with BTEX and MTBE. Whether or not ground water has been contaminated with chlorotoluenes (from the soil next to the mystery tanks contaminated with these compounds) has not been determined. The areal distribution of the soluble phase BTEX/MTBE contamination measured on the site is depicted on **Figure 3**. Based on this initial round of ground water sampling from the four wells, it appears that the majority of the contaminant mass, and the source of the ground water contaminant plume is in the pump island and UST area. Due to the lack of an overall monitoring network, it is not known if the actual plume is larger and elongated in an easterly direction. In any case





there are no known drinking water wells in the area to be impacted by this contamination in the shallow ground water system.

Whether or not bedrock ground water has been contaminated has not been determined. Considering that the ground water in the contaminated monitoring wells is probably in contact with the bedrock, it is possible that the bedrock is contaminated. However, no drinking water wells that could become impacted by contaminated bedrock ground water are presently known.

**Surface water:** The contamination has already migrated in the ground water at least 80 feet horizontally (to MW-1). It's possible that the contamination has spread far enough to discharge to the White River (an additional 60 feet from contaminated MW-1). Even if this is the case, concentrations would be diluted to undetectable levels a short distance downstream. As far as is known there are no drinking water supply intakes or sensitive habitats in the river that could be affected.

## CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the data collected during the Expressway Site Investigation indicates that:

1. Substantial vapor, dissolved, and adsorbed petroleum contamination exist beneath part of the site. Dissolved contamination has spread off-site to the south. This source of contamination will likely continue to impact the ground water far into the future.
2. The main flow component of ground water and dissolved contaminant flow is from the pump island and UST area across Route 14 and toward the White River.
3. The full horizontal or vertical extent of the contamination is not known.
4. Receptors (soil, ground water, and surface water) are and may become impacted by this contamination. However, based on current information, neither the public nor any environmentally sensitive receptors are being detrimentally affected.
5. The existence of a deep vadose zone and permeable soil indicates that the site is very amenable to remediation via soil vapor extraction.

Based on the preceding conclusions it is our recommendation that the following tasks be performed:

1. Installation of an additional monitoring well in the commuter parking lot.
2. Sampling all monitoring wells again and analyze by EPA Method 8260.
3. Sample the White River at two or three points directly along the stream bank.
4. PID monitoring of the storm sewer manholes.
5. Performing a limited soil vapor extraction test on the site to gather design data.
6. Preparation of a CAFI to evaluate the cost-effectiveness of remediating the source of contamination versus an expected long time period before intrinsic bioremediation allows closure.

Project: DJ's Corner Mobil  
Location: So. Royalton, Vermont

Table 1  
VDEC Site # 95-1933  
Sheet 1 of 1

**Ground Water Elevation/Product Level (feet)**

Data Point	TOC	11/29/95					
MW-1	96.44	72.69					
MW-2	98.29	80.04					
MW-3	98.52	86.41					
MW-4	97.64	87.98					
VP-1	98.19	87.34					
VP-2	97.71	87.21					

**Notes:**

1 - Elevation datum assumed  
2 - Reference elevation is elevation of top of PVC well casing  
Light Grey Cell = DRY  
Dark Grey Cell = Inaccessible

Project: DJ's Corner Mobil  
Location: So. Royalton, Vermont

Table 2  
VDEC Site # 95-1933  
Sheet 1 of 1

**Photoionization Results (PID - ppm)**

Data Point		11/29/95				
MW-1	0.2					
MW-2	178					
MW-3	400					
MW-4	1.8					
VP-1	90					
VP-2	4.2					

Notes:  
BG - Background  
SL - Saturated Lamp

**Soil Quality Results (ppb)**

Data Point	Compound	10/18/95					
	Benzene	<530					
	Toluene	13000					
	Ethylbenzene	21000					
	Xylenes	287000					
	Chlorotoluenes	48000					
	Other Substituted Benzenes	551600					
Mystery 1	MTBE	<2,600					
	BTEX	321530					
	Benzene	<560					
	Toluene	13000					
	Ethylbenzene	11000					
	Xylenes	143000					
	Chlorotoluenes	37000					
	Other Substituted Benzenes	381100					
Mystery 2	MTBE	<2,800					
	BTEX	167560					

**NOTES:**

MTBE in upper right corner of cell

BTEX in lower left corner of cell

< - Contaminant not detected at specified detection limit

**Ground Water Quality Results (ppb)**

Data Point	Compound	11/29/95					
MW-1	Benzene	240					
	Toluene	750					
	Ethylbenzene	60					
	Xylenes	2900					
	MTBE	300					
MW-2	BTEX	3950					
	Benzene	230					
	Toluene	37					
	Ethylbenzene	5.9					
	Xylenes	120					
MW-3	MTBE	200					
	BTEX	392.9					
	Benzene	320					
	Toluene	1000					
	Ethylbenzene	5300					
MW-4	Xylenes	32000					
	MTBE	350					
	BTEX	38620					
	Benzene	<1					
	Toluene	1.2					
River	Ethylbenzene	2.6					
	Xylenes	17					
	MTBE	<5					
	BTEX	21.8					
	Benzene	<1					
Trip	Toluene	<1					
	Ethylbenzene	<1					
	Xylenes	<3					
	MTBE	<5					
	BTEX	<6					

**NOTES:**

MTBE in upper right corner of cell

BTEX in lower left corner of cell

< - Contaminant not detected at specified detection limit

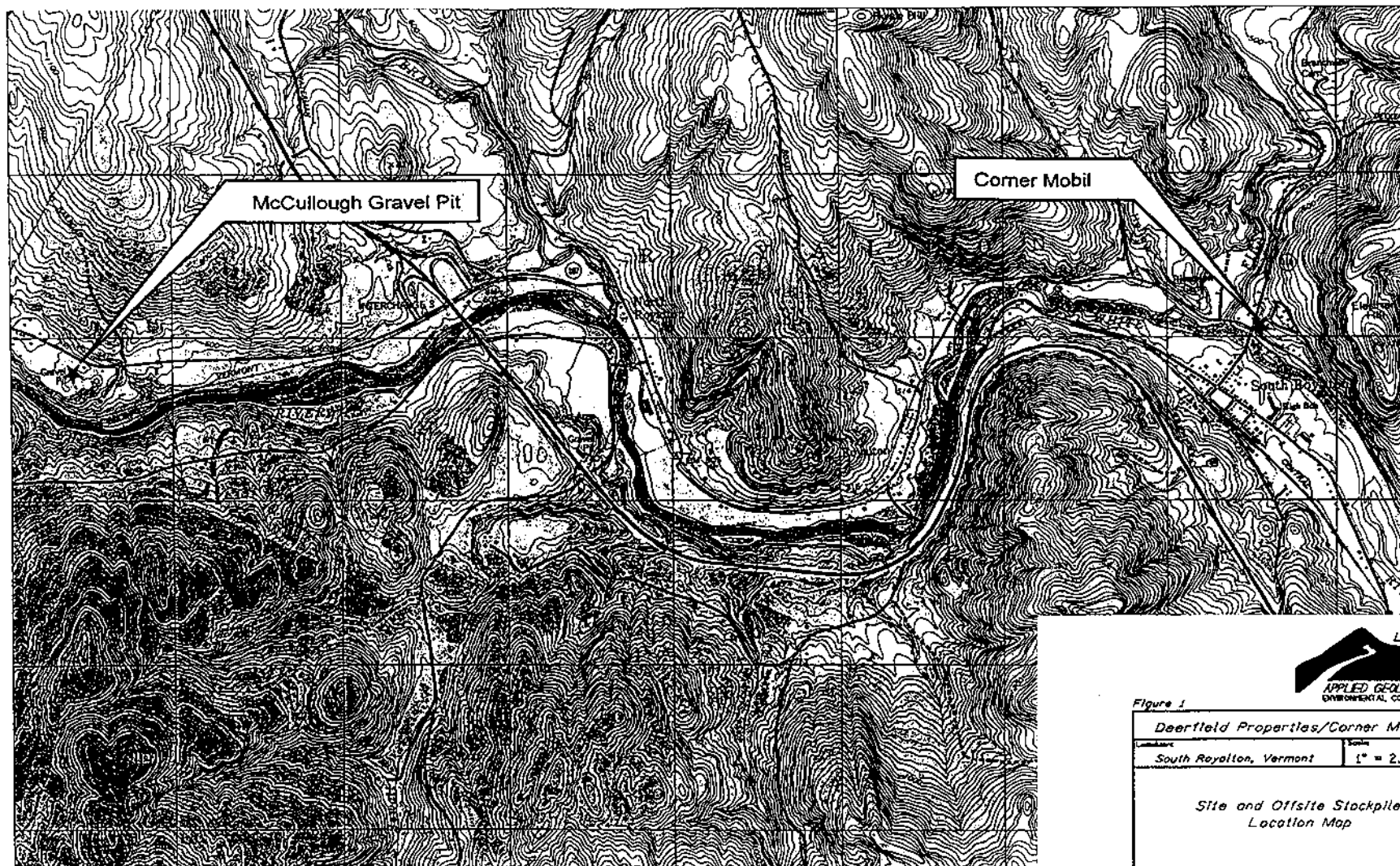
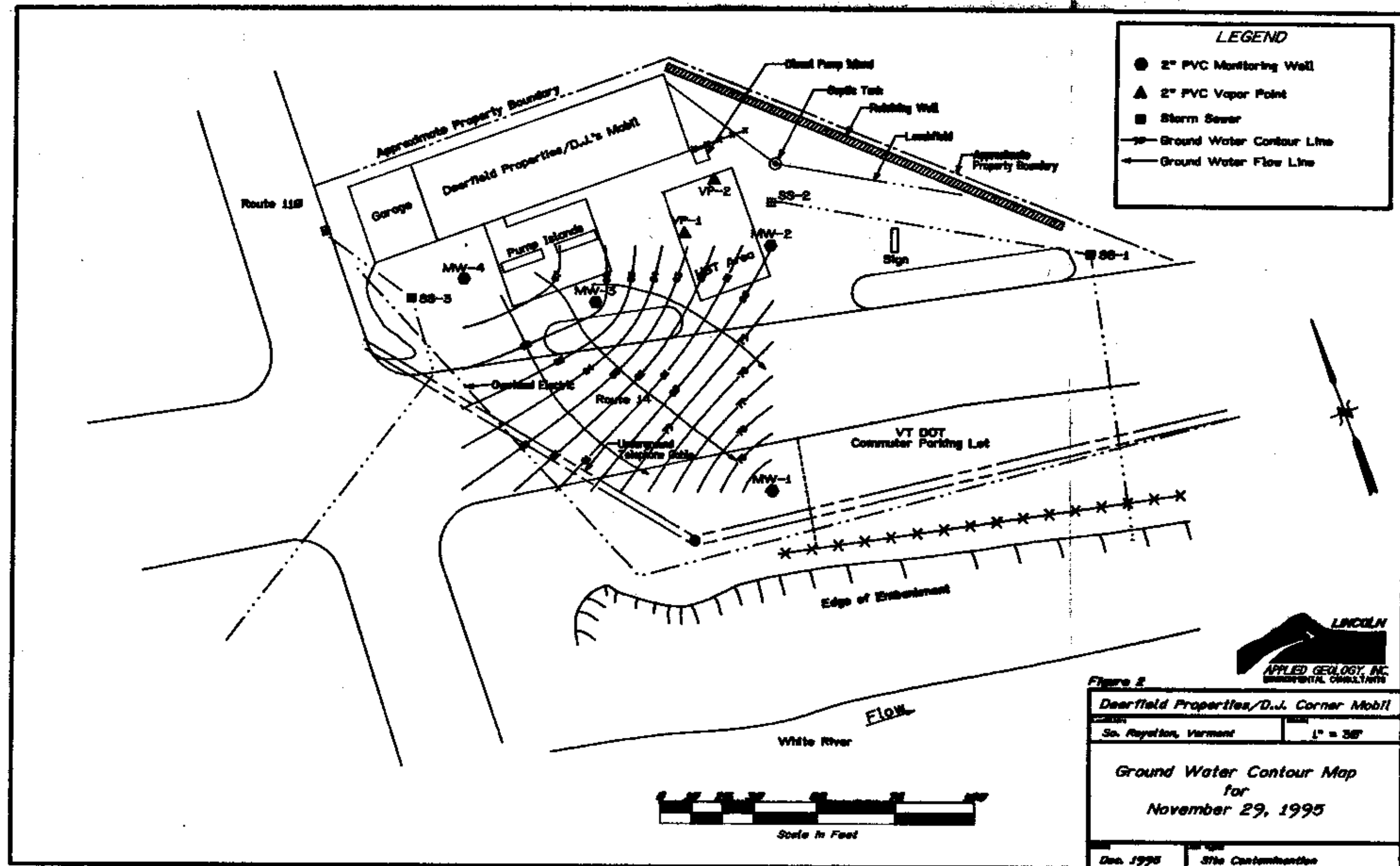


Figure 1

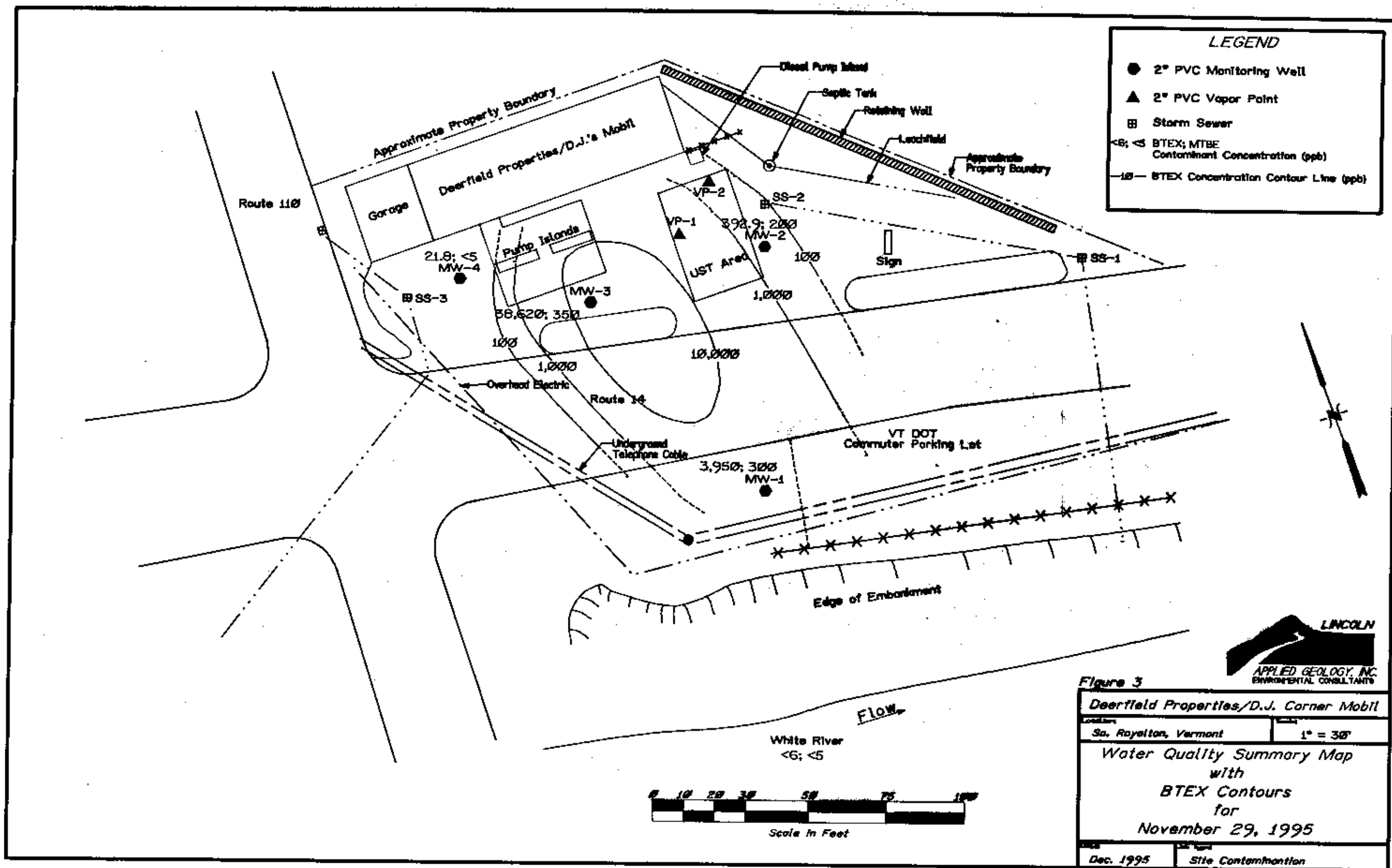
Deerfield Properties/Corner Mobil

Location	Scale
South Royalton, Vermont	1" = 2,000'
Site and Offsite Stockpile Location Map	
Date	File Type
Oct. 1995	Petroleum Contamination

Source: South Royalton, VT. U.S.G.S. 7.5 min. Quadrangle







## Appendix A

### Well Logs

## WELL LOG

WELL: MW-1  
LOCATION: Deerfield Properties - West side of Route 14  
DRILLER: T & K Drilling  
HYDROGEOLOGIST: Steven LaRosa, Lincoln Applied Geology, Inc.  
DATE: November 28, 1995

**Soils Description:** (BG = Background [0.0], SL = Saturated Lamp [>500], ppm = Parts Per Million)

<u>Depth</u>	<u>Description</u>	<u>PID (ppm)</u>
0-5'	Dry, medium to dark brown, rocky medium sand <u>fill</u> .	BG
5-13'	Dry, medium to dark brown, <u>silty fine sand</u> .	BG
13-18'	Moist, brown, <u>coarse sand</u> with 1" fragments.	BG
18-23'	Moist, medium brown, <u>fine to medium sand</u> with silt.	BG
23-30'	Saturated, olive, <u>silty very fine sand</u> . Very slight odor.	0.2
	Spoon and auger refusal at 30'.	

### Well Construction:

Bottom of Boring: 30'  
Bottom of Well: 30'  
Well Screen: 10' of 2" 0.010" slot PVC  
Solid Riser: 20' of 2" solid PVC  
Sand Pack: 30-18'  
Bentonite Seal: 18-16'  
Backfill: 16-2.5'  
Well Box: Flush

## WELL LOG

WELL: MW-2  
LOCATION: Deerfield Properties - Southeast side of UST's  
DRILLER: T & K Drilling  
HYDROGEOLOGIST: Steven LaRosa, Lincoln Applied Geology, Inc.  
DATE: November 28, 1995

**Soils Description:** (BG = Background [0.0], SL = Saturated Lamp [>500], ppm = Parts Per Million)

<u>Depth</u>	<u>Description</u>	<u>PID (ppm)</u>
0-12'	Dry, greenish brown, medium sand <u>fill</u> . Strong gasoline odor.	136 (7') 80 (11')
12-18'	Very moist, olive, very fine sandy <u>silt</u> with weathered schist rocks. Little odor.	40
18-25'	Saturated, olive, <u>fine to very fine sand</u> , dense and till like.	3.0 (19') 0.4 (21')

### Well Construction:

Bottom of Boring: 25'  
Bottom of Well: 25'  
Well Screen: 10' of 2" 0.010" slot PVC  
Solid Riser: 15' of 2" solid PVC  
Sand Pack: 25-13'  
Bentonite Seal: 13-12'  
Backfill: 12-2'  
Well Box: Flush

## WELL LOG

WELL: MW-3  
LOCATION: Deerfield Properties - Between pump island and road  
DRILLER: T & K Drilling  
HYDROGEOLOGIST: Steven LaRosa, Lincoln Applied Geology, Inc.  
DATE: November 28, 1995

**Soils Description:** (BG = Background [0.0], SL = Saturated Lamp [>500], ppm = Parts Per Million)

<u>Depth</u>	<u>Description</u>	<u>PID (ppm)</u>
0-5'	Dry, brown, sandy stoney <u>fill</u> .	BG
5-13'	Dry, brown, <u>silty fine to very fine sand</u> with weathered schist. Saturated at 12'. Strong odor.	BG (5') 260 (11') 260 (13')
	Spoon and auger refusal at 12.75'	

### Well Construction:

Bottom of Boring: 12.75'  
Bottom of Well: 12.75'  
Well Screen: 8' of 2" 0.010" slot PVC  
Solid Riser: 4.5' of 2" solid PVC  
Sand Pack: 12.75-3.75'  
Bentonite Seal: 3.75-2.75'  
Backfill: None  
Well Box: Flush

## WELL LOG

WELL: MW-4  
LOCATION: Deerfield Properties - Northwest side of pump island  
DRILLER: T & K Drilling  
HYDROGEOLOGIST: Steven LaRosa, Lincoln Applied Geology, Inc.  
DATE: November 29, 1995

Soils Description: (BG = Background [0.0], SL = Saturated Lamp [>500], ppm = Parts Per Million)

<u>Depth</u>	<u>Description</u>	<u>PID (ppm)</u>
0-1'	Dry, sandy <u>fill</u> .	BG
1-5'	Moist, brown, <u>silty fine sand</u> .	BG
5-7'	Dry, brown, <u>fine to medium sand</u> with some weathered schist fragments.	BG
7-12'	Moist to saturated, olive, <u>silty fine to very fine sand</u> with 1" fragments. Saturated at 10'. Some pebbles near bottom.	BG
	Auger refusal at 11.75'.	

### Well Construction:

Bottom of Boring: 11.75'  
Bottom of Well: 11.75'  
Well Screen: 7' of 2" 0.010" slot PVC  
Solid Riser: 4' of 2" solid PVC  
Sand Pack: 11.75-3.9'  
Bentonite Seal: 3.9-2.5'  
Backfill: None  
Well Box: Flush

## Appendix B

### Soil and Water Quality Analytical Laboratory Results

# Green Mountain Laboratories, Inc.

RR#3 Box 5210  
Montpelier, Vermont 05602

NOV - 1 1995

Phone (802) 223-1468

Fax (802) 223-8688

LINCOLN APPLIED GEOLOGY

## LABORATORY RESULTS

CLIENT NAME:	Lincoln Applied Geology	REF #:	0242
ADDRESS:	RD1 Box 710 Bristol, Vermont 05443	PROJECT NO.:	not given
SAMPLE LOCATION:	DJ's Quick Stop	DATE OF SAMPLE:	10/18/95
SAMPLER:	Steve LaRosa	DATE OF RECEIPT:	10/20/95
		DATE OF ANALYSIS:	10/24/95-10/26/95
ATTENTION:	Rick Vandenburg	DATE OF REPORT:	10/29/95

Pertaining to the analyses of specimens submitted under the accompanying chain of custody form, please note the following:

- Specimens were processed and examined according to the procedures outlined in the specified method.
- Holding times were honored.
- Instruments were appropriately tuned and calibrations were checked with the frequencies required in the specified method.
- Blank contamination was not observed at levels interfering with the analytical results.
- Continuing calibration standards were monitored at intervals indicated in the specified method. The resulting analytical precision and accuracy were determined to be within method QA/QC acceptance limits.
- The efficiency of analyte recovery for individual samples was monitored by the addition of surrogate analytes to all samples, standards, and blanks. Surrogate recoveries were found to be within laboratory QA/QC acceptance limits, unless noted otherwise.

Reviewed by:

*Arthur P. Lindell*

Director, Chemical Services



# Green Mountain Laboratories, Inc

RR#3, Box 5210

Montpelier, Vermont 05602

Phone: (802) 223-1428

Fax: (802) 223-8688

## LABORATORY RESULTS

CLIENT NAME:	Lincoln Applied Geology	PROJECT CODE:	NA
PROJECT NAME:	DJ's Quick Stop	REF.#:	0242
REPORT DATE:	October 29, 1995	STATION:	Mystery 1
DATE SAMPLED:	October 18, 1995	TIME SAMPLED:	1500
DATE RECEIVED:	October 18, 1995	SAMPLER:	Rick Vandenberg
ANALYSIS DATE:	October 24-26, 1995	SAMPLE TYPE:	Soil - 92.9% Dry Weight

### EPA METHOD 8260

PARAMETERS	PQL	µg/kg	PARAMETERS	PQL	µg/kg
Benzene	530	ND	Ethylbenzene	530	21000
Bromobenzene	530	ND	Hexachlorobutadiene	530	ND
Bromochloromethane	1000	ND	Isopropylbenzene	530	11000
Bromodichloromethane	530	ND	p-Isopropyltoluene	530	15000
Bromoform	530	ND	Methylene Chloride	5300	ND
Bromomethane	5300	ND	Methyl-t-butyl ether	2600	ND
n-Butylbenzene	530	20000	Naphthalene	530	ND
sec-Butylbenzene	530	8600	n-Propylbenzene	530	37000
tert-Butylbenzene	530	ND	Styrene	530	ND
Carbon tetrachloride	530	ND	1,1,1,2-Tetrachloroethane	530	ND
Chlorobenzene	530	ND	1,1,2,2-Tetrachloroethane	530	ND
Chloroethane	5300	ND	Tetrachloroethylene	530	ND
Chloroform	530	ND	Toluene	530	13000
Chloromethane	5300	ND	1,2,3-Trichlorobenzene	530	ND
2-Chlorotoluene	530	37000	1,2,4-Trichlorobenzene	530	ND
4-Chlorotoluene	530	11000	1,1,1-Trichloroethane	530	ND
1,2-Dibromo-3-chloropropane	530	ND	1,1,2-Trichloroethane	530	ND
Dibromochloromethane	530	ND	Trichloroethylene	530	ND
1,2-Dibromoethane	530	ND	Trichlorofluoromethane	5300	ND
Dibromomethane	530	ND	1,2,3-Trichloropropane	530	ND
1,2-Dichlorobenzene	530	ND	1,2,4-Trimethylbenzene	530	360000
1,3-Dichlorobenzene	530	ND	1,3,5-Trimethylbenzene	530	100000
1,4-Dichlorobenzene	530	ND	Vinyl Chloride	5300	ND
Dichlorodifluoromethane	5300	ND	o-Xylene	530	47000
1,1-Dichloroethane	530	ND	m+p-Xylene	1100	240000*
1,2-Dichloroethane	530	ND			
1,1-Dichloroethylene	530	ND	Surrogates:		
cis-1,2-Dichloroethylene	530	ND	Dibromofluoromethane	99.3%	
trans-1,2-Dichloroethylene	530	ND	Toluene-D8	109%	
1,2-Dichloropropane	530	ND	4-Bromofluorobenzene	104%	
1,3-Dichloropropane	530	ND			
2,2-Dichloropropane	530	ND			
1,1-Dichloropropene	530	ND			

e = Estimated due to calibration criteria exceedances.

\*Note: This sample was analyzed at a higher dilution to bring the concentration of these compounds within the linear range of the calibration curve.

NOV 01 1995

# Green Mountain Laboratories, Inc

RR#3, Box 5210

Montpelier, Vermont 05602

Phone: (802) 223-1428

Fax: (802) 223-8688

## LABORATORY RESULTS

CLIENT NAME:	Lincoln Applied Geology	PROJECT CODE:	NA
PROJECT NAME:	DJ's Quick Stop	REF.#:	0242
REPORT DATE:	October 29, 1995	STATION:	Mystery 2
DATE SAMPLED:	October 18, 1995	TIME SAMPLED:	1500
DATE RECEIVED:	October 18, 1995	SAMPLER:	Rick Vandenberg
ANALYSIS DATE:	October 24-26, 1995	SAMPLE TYPE:	Soil - 87.1% Dry Weight

## EPA METHOD 8260

PARAMETERS	PQL	µg/kg	PARAMETERS	PQL	µg/kg
Benzene	560	ND	Ethylbenzene	560	11000
Bromobenzene	560	ND	Hexachlorobutadiene	560	ND
Bromochloromethane	1100	ND	Isopropylbenzene	560	2700
Bromodichloromethane	560	ND	p-Isopropyltoluene	560	16000
Bromoform	560	ND	Methylene Chloride	5600	ND
Bromomethane	5600	ND	Methyl-t-butyl ether	2800	ND
n-Butylbenzene	560	11000	Naphthalene	560	ND
sec-Butylbenzene	560	2300	n-Propylbenzene	560	9100
tert-Butylbenzene	560	ND	Styrene	560	ND
Carbon tetrachloride	560	ND	1,1,1,2-Tetrachloroethane	560	ND
Chlorobenzene	560	ND	1,1,2,2-Tetrachloroethane	560	ND
Chloroethane	5600	ND	Tetrachloroethylene	560	ND
Chloroform	560	ND	Toluene	560	13000
Chloromethane	5600	ND	1,2,3-Trichlorobenzene	560	ND
2-Chlorotoluene	560	23000	1,2,4-Trichlorobenzene	560	ND
4-Chlorotoluene	560	14000	1,1,1-Trichloroethane	560	ND
1,2-Dibromo-3-chloropropane	560	ND	1,1,2-Trichloroethane	560	ND
Dibromochloromethane	560	ND	Trichloroethylene	560	ND
1,2-Dibromoethane	560	ND	Trichlorofluoromethane	5600	ND
Dibromomethane	560	ND	1,2,3-Trichloropropane	560	ND
1,2-Dichlorobenzene	560	ND	1,2,4-Trimethylbenzene	560	200000*
1,3-Dichlorobenzene	560	ND	1,3,5-Trimethylbenzene	560	140000*
1,4-Dichlorobenzene	560	ND	Vinyl Chloride	5600	ND
Dichlorodifluoromethane	5600	ND	o-Xylene	560	51000
1,1-Dichloroethane	560	ND	m+p-Xylene	1100	92000
1,2-Dichloroethane	560	ND			
1,1-Dichloroethylene	560	ND	Surrogates:		
cis-1,2-Dichloroethylene	560	ND	Dibromofluoromethane	91.5%	
trans-1,2-Dichloroethylene	560	ND	Toluene-D8	104%	
1,2-Dichloropropane	560	ND	4-Bromofluorobenzene	110%	
1,3-Dichloropropane	560	ND			
2,2-Dichloropropane	560	ND			
1,1-Dichloropropene	560	ND			

ND - Not Detected

Concentration units = µg/kg

\*Note: This sample was analyzed at a higher dilution to bring the concentration of these compounds within the linear range of the calibration curve.

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Montpelier, VT 05602  
(802) 223-1468 • fax (802) 223-8688

RR #3, box 5210

Montpelier, VT 05602

(802) 223-1468 • fax (802) 223-8688

CLIENT NAME Joseph Andrew Goss

ADDRESS RD Box 710 E. ST. VT 05443

PROJECT NAME OJ's Quick Stop

PROJECT NUMBER

PROJECT MANAGER *R. VandenBerg*

SAMPLER *S. L. Lugo*

Page

\_\_\_\_\_ of \_\_\_\_\_



GML #

242

REMARKS:

[illegible]

## CHAIN OF CUSTODY RECORD

CHAIN OF CUSTODY RECORD			
1) Relinquished by:		Received by:	 Date/Time 10/20/95 12:20pm
2) Relinquished by:		Received by:	Date/Time
3) Relinquished by:		Received by:	Date/Time

# Green Mountain Laboratories, Inc.

RR#3 Box 5210  
Montpelier, Vermont 05602

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Fax (802) 223-8688

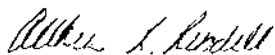
## LABORATORY RESULTS

CLIENT NAME:	Lincoln Applied Geology	REF #:	0350
ADDRESS:	RD1 Box 710 Bristol, Vermont 05443	PROJECT NO.:	not given
SAMPLE LOCATION:	DJ's/Deerfield Properties	DATE OF SAMPLE:	11/29/95
SAMPLER:	Steve LaRosa	DATE OF RECEIPT:	11/29/95
		DATE OF ANALYSIS:	12/6/95-12/8/95
ATTENTION:	Steve LaRosa	DATE OF REPORT:	12/11/95

Pertaining to the analyses of specimens submitted under the accompanying chain of custody form, please note the following:

- Water samples submitted for VOC analysis were preserved with HCl. The trip blank was prepared by the client from reagent water supplied by the laboratory.
- Specimens were processed and examined according to the procedures outlined in the specified method.
- Holding times were honored.
- Instruments were appropriately tuned and calibrations were checked with the frequencies required in the specified method.
- Blank contamination was not observed at levels interfering with the analytical results.
- Continuing calibration standards were monitored at intervals indicated in the specified method. The resulting analytical precision and accuracy were determined to be within method QA/QC acceptance limits.
- The efficiency of analyte recovery for individual samples was monitored by the addition of surrogate analytes to all samples, standards, and blanks. Surrogate recoveries were found to be within laboratory QA/QC acceptance limits, unless noted otherwise.

Reviewed by:



Director, Chemical Services

12 12

# Green Mountain Laboratories, Inc.

RR#3, Box 5210

Montpelier, Vermont 05602

Phone (802) 223-1468

Fax (802) 223-8688

## LABORATORY RESULTS

GC/MS METHOD - BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES) + MTBE

CLIENT NAME:	Lincoln Applied Geology	PROJECT CODE:	not given
PROJECT NAME:	DJ's/ Deerfield Properties	GML REF.#:	0350
REPORT DATE:	December 11, 1995	STATION:	Trip
DATE SAMPLED:	November 29, 1995	TIME SAMPLED:	1100
DATE RECEIVED:	November 29, 1995	SAMPLER:	Steve LaRosa
ANALYSIS DATE:	December 6, 1995	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	ND
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	3	ND
MTBE	5	ND

Surrogate % Recovery: 107 %

ND = Not Detected.

DEL 28

# Green Mountain Laboratories, Inc.

RR #3, Box 5210

Montpelier, Vermont 05602

Phone (802) 223-1468

Fax (802) 223-8688

## LABORATORY RESULTS

GC/MS METHOD - BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES) + MTBE

CLIENT NAME:	Lincoln Applied Geology	PROJECT CODE:	not given
PROJECT NAME:	DJ's/ Deerfield Properties	GML REF.#:	0350
REPORT DATE:	December 11, 1995	STATION:	MW-1
DATE SAMPLED:	November 29, 1995	TIME SAMPLED:	1105
DATE RECEIVED:	November 29, 1995	SAMPLER:	Steve LaRosa
ANALYSIS DATE:	December 6 & 8, 1995	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	240
Toluene	1	750*
Ethylbenzene	1	60
Xylenes	3	2900*
MTBE	5	300

Surrogate % Recovery: 97.8 %

DEC 29 1995

ND = Not Detected.

\*Note: This sample was reanalyzed at a higher dilution to bring the concentration of these compounds within the linear range of the calibration curve.

U-E

LABORATORY

# Green Mountain Laboratories, Inc.

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Montpelier, Vermont 05602

Phone (802) 223-1468

Fax (802) 223-8688

## LABORATORY RESULTS

GC/MS METHOD - BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES) + MTBE

CLIENT NAME:	Lincoln Applied Geology	PROJECT CODE:	not given
PROJECT NAME:	DJ's/ Deerfield Properties	GML REF.#:	0350
REPORT DATE:	December 11, 1995	STATION:	MW-2
DATE SAMPLED:	November 29, 1995	TIME SAMPLED:	1115
DATE RECEIVED:	November 29, 1995	SAMPLER:	Steve LaRosa
ANALYSIS DATE:	December 6, 1995	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	230
Toluene	1	37
Ethylbenzene	1	5.9
Xylenes	3	120
MTBE	5	200

DEC 29 1995

Surrogate % Recovery: 102 %

DEC 29 1995

# Green Mountain Laboratories, Inc.

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Fax (802) 223-8688

## LABORATORY RESULTS

GC/MS METHOD - BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES) + MTBE

CLIENT NAME:	Lincoln Applied Geology	PROJECT CODE:	not given
PROJECT NAME:	DJ's/ Deerfield Properties	GML REF.#:	0350
REPORT DATE:	December 11, 1995	STATION:	MW-3
DATE SAMPLED:	November 29, 1995	TIME SAMPLED:	1140
DATE RECEIVED:	November 29, 1995	SAMPLER:	Steve LaRosa
ANALYSIS DATE:	December 6 & 8, 1995	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	10	320
Toluene	10	1000*
Ethylbenzene	10	5300*
Xylenes	30	32000*
MTBE	50	350

Surrogate % Recovery: 99.4 %

ND = Not Detected.

\*Note: This sample was reanalyzed at a higher dilution to bring the concentration of these compounds within the linear range of the calibration curve.

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# Green Mountain Laboratories, Inc.

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Montpelier, Vermont 05602

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## LABORATORY RESULTS

GC/MS METHOD - BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES) + MTBE

CLIENT NAME:	Lincoln Applied Geology	PROJECT CODE:	not given
PROJECT NAME:	DJ's/ Deerfield Properties	GML REF.#:	0350
REPORT DATE:	December 11, 1995	STATION:	MW-4
DATE SAMPLED:	November 29, 1995	TIME SAMPLED:	1110
DATE RECEIVED:	November 29, 1995	SAMPLER:	Steve LaRosa
ANALYSIS DATE:	December 7, 1995	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	ND
Toluene	1	1.2
Ethylbenzene	1	2.6
Xylenes	3	17
MTBE	5	ND

Surrogate % Recovery: 102 %

DEC 29 1995

ND = Not Detected.

# Green Mountain Laboratories, Inc.

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Fax (802) 223-8688

## LABORATORY RESULTS

GC/MS METHOD - BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES) + MTBE

CLIENT NAME:	Lincoln Applied Geology	PROJECT CODE:	not given
PROJECT NAME:	DJ's/ Deerfield Properties	GML REF.#:	0350
REPORT DATE:	December 11, 1995	STATION:	River
DATE SAMPLED:	November 29, 1995	TIME SAMPLED:	1120
DATE RECEIVED:	November 29, 1995	SAMPLER:	Steve LaRosa
ANALYSIS DATE:	December 7, 1995	SAMPLE TYPE:	Water

PARAMETER	PQL (µg/L)	Conc. (µg/L)
Benzene	1	ND
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	3	ND
MTBE	5	ND

Surrogate % Recovery: 104 %

ND = Not Detected

## Green Mountain Laboratories, Inc.

RR #3, box 5210

Montpelier, VT 05602

(802) 223-1468 • fax (802) 223-8688

IDENT NAME Lincoln Applied Geology Inc.

DRESS R01 Box 710 Bristol VT 05443

PROJECT NAME DJ's / Deerfield Properties

PROJECT NUMBER

PROJECT MANAGER *S. L. Rosa*

AMPLER *S. L. Rosen*

ANALYSIS REQUESTED

Page

\_\_\_\_\_ of \_\_\_\_\_

GML #

350

REMARKS:

[illegible]

## CHAIN OF CUSTODY RECORD

Relinquished by:

~~Received by:~~

Date/Time 11/29/95 12:41 pm

Relinquished by:

Received by:

Date/Time

Relinquished by:

Received by:

Date/Time	Location	Activity	Remarks
10/10/2023 10:00	Room 101	Meeting	Discuss project progress
10/10/2023 14:30	Room 202	Training	Software training session
10/10/2023 18:00	Room 303	Dinner	Team dinner at restaurant
10/11/2023 09:00	Room 101	Meeting	Client meeting
10/11/2023 13:00	Room 202	Training	Project management training
10/11/2023 17:00	Room 303	Dinner	Team dinner at restaurant

## Appendix C

### UST Removal and Closure Form



October 24, 1995

Mr. Marc Coleman  
Underground Storage Tank Program  
Department of Environmental Conservation  
103 South Main Street  
Waterbury, Vermont 05671

RE: Underground Storage Tank Removal and Closure at the Corner Mobil/Deerfield Properties, South Royalton, Vermont

Dear Mr. Coleman:

Lincoln Applied Geology, Inc. (LAG) has completed oversight of the tank removal activities at the above referenced site on behalf of Bradford Oil Company, Inc. (BOC). Two 6,000 gallon gasoline, one 4,000 gallon gasoline, and one 2,000 gallon diesel underground storage tank (UST) were removed and replaced with one 10,000 gallon gasoline and one 10,000 split gasoline/diesel UST. During the removal of these registered USTs, two out-of-service unregistered USTs were discovered partially buried beneath the building. These tanks are scheduled to be cleaned and abandoned in-place because of their location under the building. We will forward any additional information to you regarding the in-place abandonment of these tanks as soon as it becomes available.

Results of the tank removal and assessment indicate that soil contamination is present on-site surrounding at least one of the 6,000 gallon USTs, the 4,000 gallon gasoline UST, and the 2,000 gallon diesel UST. Soil contamination was also identified associated with the unregistered USTs. The receptor assessment did not reveal any potential receptors other than the soils, ground water, the adjacent White River, and the only impacted receptor identified to date are the soils beneath the site. It should be noted, however, that the ground waters beneath the site were not observed during the excavation and tank removal activities.

Included within **Appendix A** of the package for your review and approval are the Tank Closure Form and Expressway Notification Form. **Appendix B** contains photographs of the UST removal process. **Figure 1** shows the location of pertinent features in the area of the site.

The removal operations began on October 16, 1995. BOC was responsible for purging and removing each of the tanks. The Tank Closure Form contains a sketch map that details each of the tanks location and the extent of contamination that was detected by photoionization detector (PID). Tank #0001 and 0002 were removed and

Mr. Marc Coleman  
Page 2  
October 24, 1995

assessed on October 17, 1995. Tanks #0003 and #0004 were removed on October 18, 1995. The two unregistered tanks (#0005 and 0006) were assessed in-place on October 19, 1995. The assessment and abandonment of the unregistered tanks will be finished by BOC later this week.

Inspection of the removed tanks revealed that all tanks were somewhat rusted and, at the least, slightly pitted. Tanks #0001 and #0002 were found to be in fair condition with some mild rust present extending down to mid tank. A few shallow pits were also noted on the bottom of each tank. Tanks #0003 and 0004 were found to be in poor condition with at least some signs of product weepage noted. Both tanks were rusted on top with moderately deep pitting and some weepage stains noted on their bottoms. Based on this information, tanks #0003 and #0004 were probably actively leaking gasoline and diesel product to the subsurface. PID assays taken from the soils beneath these two tanks further supports this statement.

The soils surrounding these and all other tanks were found to consist of sands and gravel. A 2.5 foot thick loess deposit (wind blown silt) was also noted in the soil horizon. All the abovementioned soils were assayed with a properly calibrated photoionization detector (PID) during excavation. In general, all the soils surrounding the tanks were found to be contaminated with petroleum products, except the soils surrounding some of tank #0001 and all of tank #0002. The soils near the fill of tank #0001 contained an average PID assay of 500 parts per million (ppm). This contamination was delineated during the remaining excavation of tank #0001 and found at slightly lower concentrations along the west side of the tank extending to a depth of 14 feet. This suggests that tank #0001 was periodically overfilled while it was in service. In contrast, all the assayed soils associated with tank #0002 contained levels below 10 ppm. All the other tanks were surrounded with contaminated soils that averaged 200 ppm with peak concentrations detected immediately beneath each tank.

Elevated concentrations (>2,000 ppm) of petroleum products were detected by PID beneath both unregistered tanks (#0005 and #0006). Both tanks are 48-inches in diameter but their capacity is unknown because they extend under the building. Eight inches and 1 inch of product remain in tank #0005 and #0006, respectively. BOC will appropriately clean and abandon these tanks in-place later this week. Two soil samples were collected from immediately beneath the tanks in order to verify the elevated levels detected by PID. The soils samples were taken to Green Mountain Laboratories, Inc. for analysis by EPA 8260 including methyl tert-butyl ether (MTBE). We will forward these results to you as soon as they are received and reviewed.

The excavated soils were placed in the hole created by the removal of tanks



Lincoln Applied Geology, Inc.  
Environmental Consultants

RD # 1 Box 710 • Bristol, Vermont 05443 • (802) 453-4384 • FAX (802) 453-5399

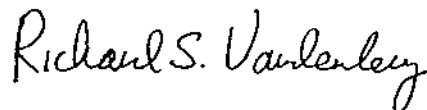
Mr. Marc Coleman  
Page 3  
October 24, 1995

#0001 and #0002. The remaining soils (200 - 250 yds<sup>3</sup>) are stockpiled above this area and await approval from the SMS to stockpile at the McCullough gravel pit in Royalton, Vermont (Figure 1). We will begin moving these soils as soon as all the approvals are obtained.

LAG has chosen to proceed with the Expressway Site Investigation method so a quick evaluation of the magnitude of this problem can be completed. The Expressway Notification Form is attached in **Appendix A**.

If you have any questions with regard to the abovementioned information please do not hesitate to call me or Project Engineer, Alan Moore, P.E., at (802) 453-4384.

Very truly yours,



Richard S. Vandenberg  
Hydrogeologist

RSV/smk  
enclosure  
cc: Bill Sellinger



Lincoln Applied Geology, Inc.  
Environmental Consultants

RD # 1 Box 710 • Bristol, Vermont 05443 • (802) 453-4384 • FAX (802) 453-5399



# State of Vermont

Department of Fish and Wildlife  
Department of Forests, Parks and Recreation  
Department of Environmental Conservation  
State Geologist  
Natural Resources Conservation Council  
RELAY SERVICE FOR THE HEARING IMPAIRED  
1-800-253-0191 TDD>Voice  
1-800-253-0195 Voice>TDD

AGENCY OF NATURAL RESOURCES  
Department of Environmental Conservation  
Hazardous Materials Management Division  
103 South Main Street/West Office  
Waterbury, Vermont 05671-0404  
(802) 241-3888  
FAX (802) 244-5141

## SITE INVESTIGATION EXPRESSWAY NOTIFICATION

Site Owner: Deerfield Properties/BJ's Mobil

Site Name, Town: South Royalton

☒ Yes, this site will participate in the Site Investigation Expressway Process.

☐ No, this site will not participate in the Site Investigation Expressway Process.

If yes, please complete the checklist below:

✓ Contamination present in soils above action levels ☒ Yes ☐ No

If yes, summarize levels:

✓ Free product observed ☐ Yes ☒ No

✓ Groundwater contamination observed ☐ Yes ☒ No

✓ Surface water contamination observed ☐ Yes ☒ No

✓ Suspected release of hazardous substances ☒ Yes ☐ No

If yes, please explain:

~~Petroleum related contamination averaging 200 ppm by PID.~~

✓ Affected receptors ☐ Yes ☒ No

If yes, please identify receptors including names and addresses of third party receptors:

Please provide an estimated date of when you expect to submit Site Investigation Report: Dec 24, 1995



# UNDERGROUND STORAGE TANK PERMANENT CLOSURE FORM

**AGENCY USE ONLY**  
 had. closure date: 10/16/95  
 Facility Town: ROYALTON  
 Facility ID#: 124  
 EC Official: S.E.T.  
 released by: \_\_\_\_\_

VERMONT AGENCY OF NATURAL RESOURCES  
 DEPT. OF ENVIRONMENTAL CONSERVATION  
 HAZARDOUS MATERIALS MANAGEMENT DIV.  
 103 SOUTH MAIN STREET, WEST BUILDING  
 WATERBURY, VERMONT 05671-0404  
 TELEPHONE: (802) 241-3888

Company conducting  
 site assessment: Lincoln Applied Geology  
 Permit conducting  
 site assessment: R. Vandenberg & S. LaRose  
 Telephone number of  
 company (or person): 453-4384  
 Date of UST closure: 10/16-10/19 1995  
 Date of site assessment: 10/16-10/19 1995

This Closure Form may only be used for the facility and date indicated in the upper left hand corner. Changes in the scheduled closure date should be phoned in at least 48 hours in advance. Both the yellow and white copies must be returned to the above address; the pink copy should be retained by the UST owner. A written report from an environmental consultant covering all aspects of closure and site assessment, complete with photographs and any other relevant data, must accompany this form. All procedures must be conducted by qualified personnel - including training required by 29 CFR 1910.120. Documentation of all methods and materials used must be adequate. All work must be performed in compliance with DEC policy "UST Closure and Site Assessment Requirements" as well as all applicable statutes, regulations, and additional policies. The DEC may reject inadequate closure forms and reports.

## Section A. Facility Information:

Name of Facility: DEERFIELD PROP. CENT. MOBIL Number of Employees: 3  
 Street address of facility: Route 110/4, South Royalton, VT  
 Owner of UST(s) to be closed: Bradford Oil Company/unknown  
 Name of Contact and telephone number if different from owner: Mr. Bill Sellinger 802-222-5250  
 Mailing address of owner: P.O. Box 394, Bradford, VT 05033  
 Telephone number of owner: (802) 222-5250

## Section B. UST Closure Information: (please check one)

Reason for initiating UST Closure: ☐ Suspected Leak ☐ Liability ☒ Replacement ☐ Abandoned  
 Which portion of UST is being closed: ☐ Tanks ☐ Piping ☒ Tanks & Piping  
 USTs undergoing permanent closure. Include condition and if leaks were found:

UST#	Product	Size (gallons)	Tank age	Tank condition	Piping age	Piping condition
0001	gasoline	6,000	12 years	fair	8 years	fair
0002	gasoline	6,000	12 years	fair	8 years	fair
0003	gasoline	4,000	12 years	fair/weeping	8 years	fair
0004	diesel	2,000	12 years	poor/leaking	8 years	fair

Which tanks, if any, will be closed in-place (must have approval from DEC) 00005 & 00006 - two tanks found  
 Disposal/destruction of removed UST(s): McCullough Farm - culverts/ partially under foundation (see photo  
 Location Royalton, VT Date / / Method / / Date / /  
 (not moved yet) & narrative).

Amount (gal.) and type of waste generated from USTs: \_\_\_\_\_  
 Tank cleaning company (must be trained in confined space entry): Bradford Oil Company  
 Certified hazardous waste hauler (tank contents are hazardous waste unless recovered and usable product): Bradford Oil Company  
 Hazardous waste generator ID number: VTD #988380564

USTs not closed. This portion must be filled in to include all USTs, regardless of size, and status, \*whether "abandoned", "in use", "to be installed", or "not aware of any other tanks on-site". Remember: most new installations require permits and advance notice to this office.

UST#	Product	Size (gallons)	Tank age	*Tank Status	Piping Age	*Piping Status
0005	gasoline	≥ 1,000	> 20 years	to be abandoned	> 20 years	to be abandoned
0006	gasoline	≥ 1,000	> 20 years	to be abandoned	> 20 years	to be abandoned
0007	gasoline	10,000	new	to be installed	new	to be installed
0008	gasoline/diesel	10,000	new	to be installed	new	to be installed

## Section C. Initial site characterization:

Work in this section must be completed by a professional environmental consultant or hydrogeologist with experience in environmental sampling for the presence of hazardous materials. A full report from the consultant must accompany this form.

Excavation size (ft<sup>3</sup>): 1000 Excavation depth (ft): 14-16 Soil type: sand & gravel Bedrock depth (ft): 13-16?  
 Information: Make: HNU Model: PI-101

daily prior  
P Calibration information: Date to work Time \_\_\_\_\_ Type of Gas isobutylene  
Contamination detected with PID (ppm): Peak 51 Depth of peak (ft) 12-13 Avg. 200  
Soil samples collected for laboratory analysis? Yes x # of samples 2 No \_\_\_\_\_  
(if locations and depth of all readings and samples on diagram).

Have soils been polyencapsulated on site? Yes x list amount (cu. yds.): 200-250 No \_\_\_\_\_  
Have any soils been transported off site? Yes \_\_\_\_\_ list amount (cu. yds.): \_\_\_\_\_ No \_\_\_\_\_  
Location transported to: McCullough Gravel Pit, Royalton, VT (await off-site stockpile)  
Name of DEC official granting approval to transport soils: \_\_\_\_\_ Date: / /  
Amount of soils backfilled. (cu. yds.): 100-150 Avg. PID 200  
Have limits of contamination been defined? Yes \_\_\_\_\_ No x  
Are you aware of any other contaminants which may be present? Yes \_\_\_\_\_ No x  
Comments: \_\_\_\_\_

Free phase product encountered? Yes \_\_\_\_\_ thickness \_\_\_\_\_ No x  
Groundwater encountered? Yes \_\_\_\_\_ depth(ft) \_\_\_\_\_ No x

Were there existing monitoring wells on site? Yes \_\_\_\_\_ (# samples taken \_\_\_\_\_) No x  
Have new monitoring wells been installed? Yes x (# samples taken \_\_\_\_\_) No \_\_\_\_\_ (vapor monitor wells)  
Samples collected from monitoring wells for lab analysis? Yes \_\_\_\_\_ No x  
(if well location, headspace readings, and laboratory results if applicable in a separate report and on the site diagram)  
Is there a water supply well or spring on site? Yes \_\_\_\_\_ (check type: shallow \_\_\_\_\_ rock \_\_\_\_\_ spring \_\_\_\_\_) No x  
How many public water supply wells are located within a 0.5 mile radius? 0 min. distance (ft): \_\_\_\_\_  
How many private water supply wells are located within a 0.5 mile radius? 0 min. distance (ft): \_\_\_\_\_  
What receptors have been impacted? x soil \_\_\_\_\_ indoor air \_\_\_\_\_ groundwater \_\_\_\_\_ surface water \_\_\_\_\_ water supply \_\_\_\_\_

**Section D. Statements of UST closure compliance:** (must have both signatures or site assessment not complete)

As the party responsible for compliance with the Vermont UST Regulations and related statutes at this facility, I hereby certify that all of the information provided on this form is true and correct to the best of my knowledge.

Rosette Ayotte  
Signature of UST owner or owner's authorized representative

Date: OCT 24, 1995

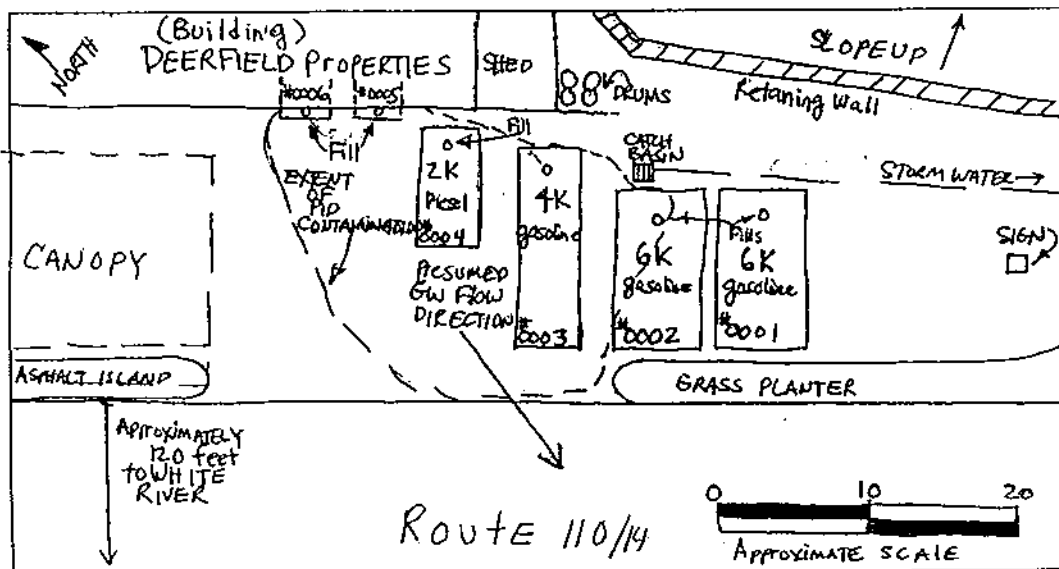
I, the environmental consultant on site, I hereby certify that the site assessment requirements were performed in accordance with DEC policy and regulations, and that information which I have provided on this form is true and correct to the best of my knowledge.

Richard S. Vandenberg  
Signature of Environmental Consultant

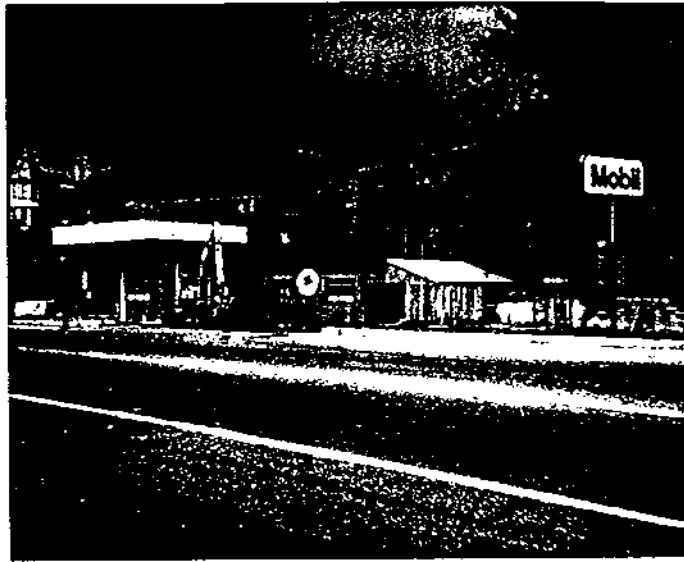
Date: 24 OCT 95

**SITE DIAGRAM**

Show location of all tanks and distance to permanent structures, sample points, areas of contamination, potential receptors and any pertinent site information. Indicate North arrow and major street names or route number.



Return form along with complete narrative report and photographs to the Department of Environmental Conservation, Underground Storage Tank Program within 72 hours of closure.



Photograph #1  
View to the north of Deerfield properties.



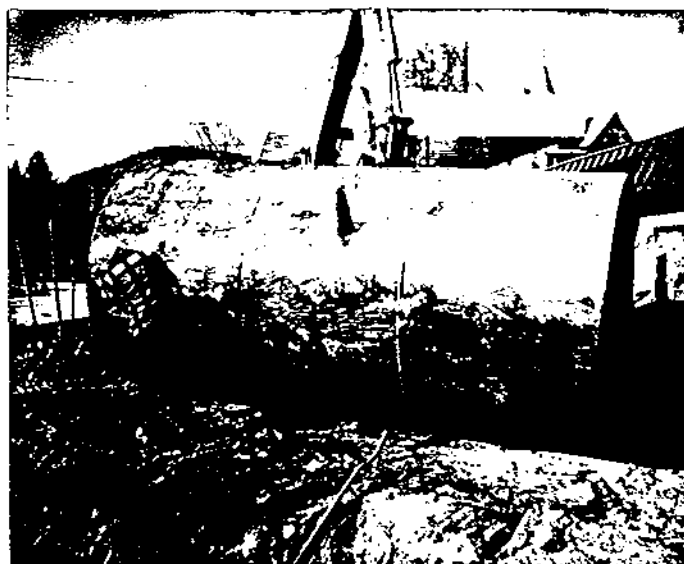
Photograph #2  
View to the north of the excavation activities



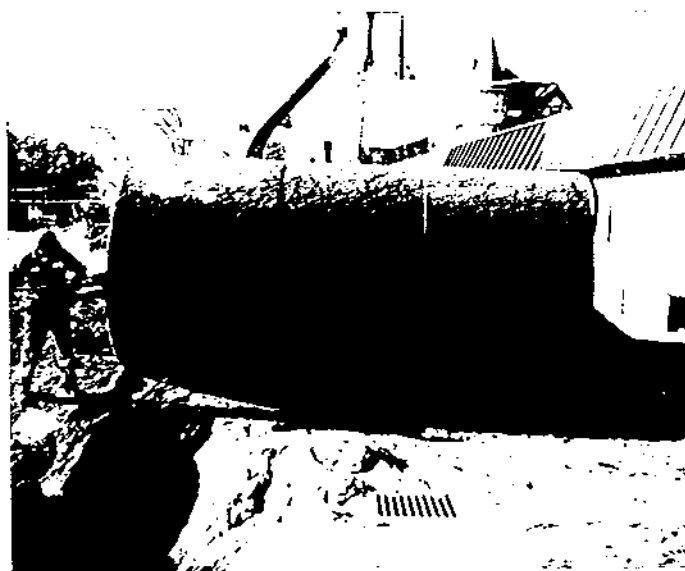
Photograph #3  
View of the uncovering of tank #0001.



Photograph #4  
View of the removal of tank #0001.



Photograph #5  
View of the bottom of tank #0001.



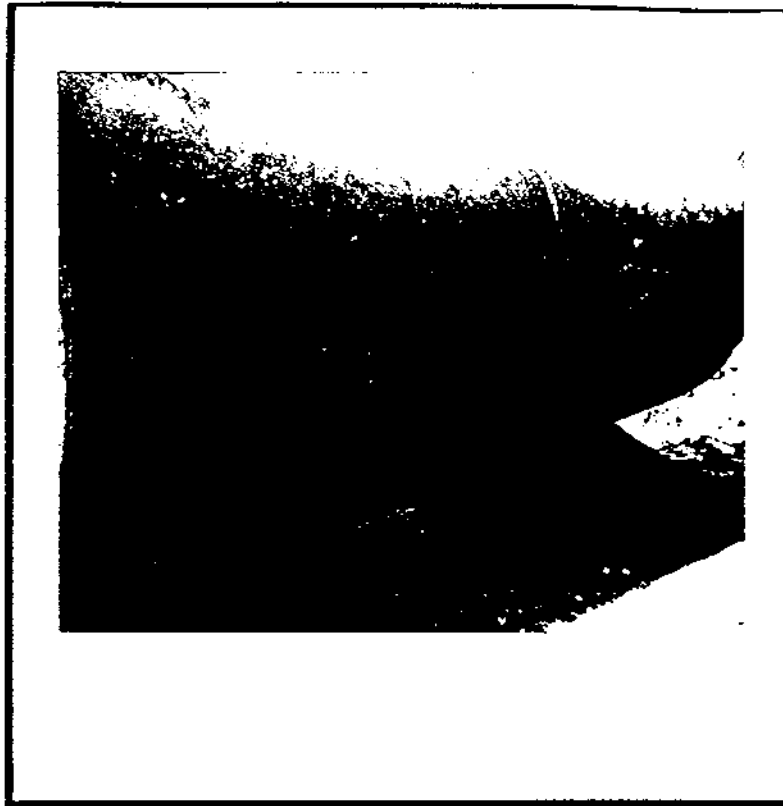
Photograph #6  
View of the bottom of tank #0002.



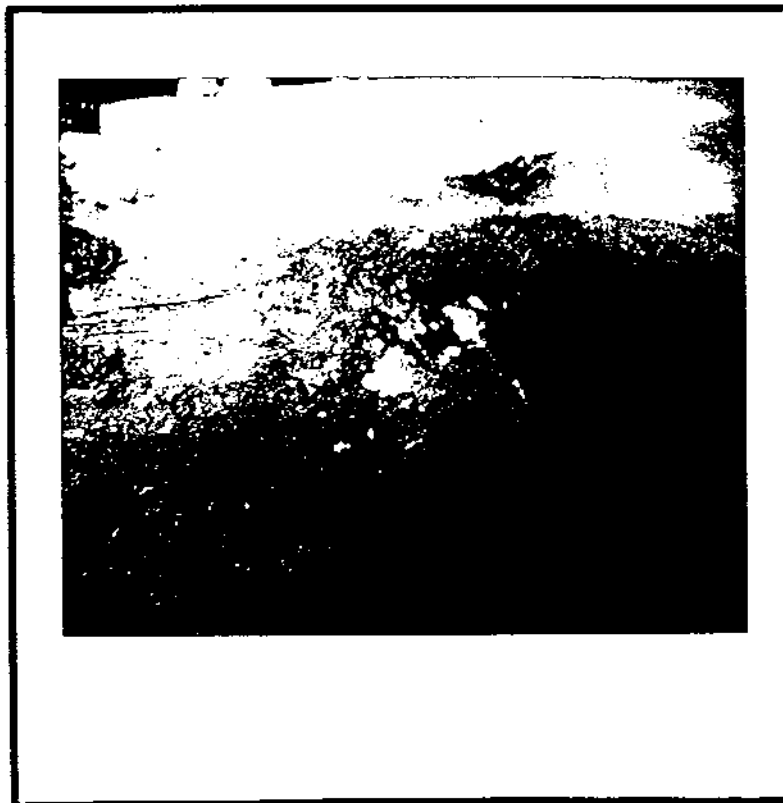
Photograph #7  
View of the soil beneath tank #0002.



Photograph #8  
View of the bottom of tank #0003.



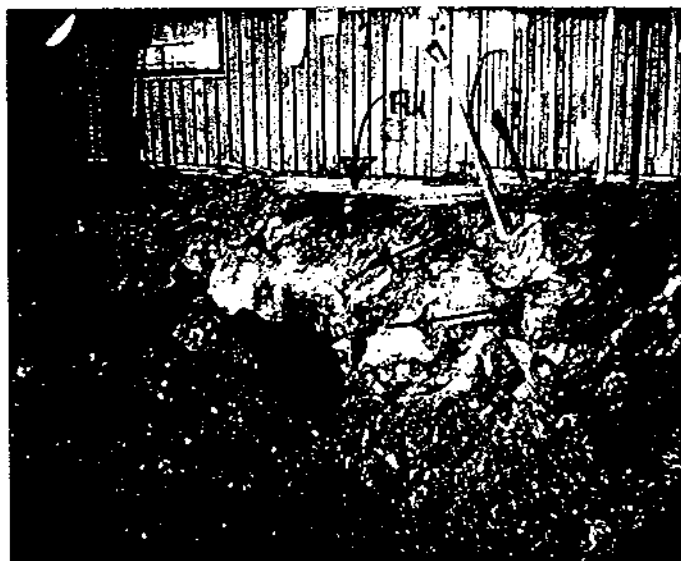
Photograph #9  
View of the bottom of tank #0004.



Photograph #10  
View of the worn surface of tank #0004



Photograph #11  
View of the mystery tanks #0005 and #0006.



Photograph #12  
View of mystery tank #0005 partially  
buried under the building.





Photograph #13  
View of mystery tank #0006 partially  
buried under the building.